

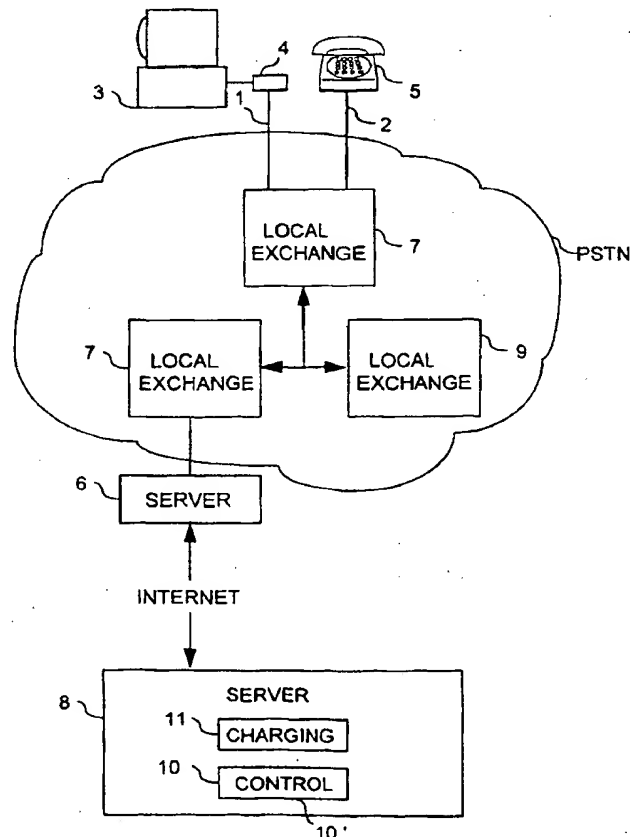


## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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**(54) Title:** A METHOD AND A SYSTEM FOR CHARGING A USER OF A COMPUTER SYSTEM**(57) Abstract**

This invention relates to a method for charging a user of a computer system of the chargeable services used by him. So that the user could be charged for although he hasn't got a separate user identification the access to the chargeable services of the computer system (8) is offered to the user via his terminal (3) for the time period during which a connection from the user's telephone (5) to the predetermined chargeable telephone number exists, when the user is charged for the use of the chargeable services by adding the sum to be charged for the use to his telephone bill.



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A method and a system for charging a user of a computer system

5 This invention relates to a method for charging a user of a computer system for the services liable to charges used by him. The invention relates also to a computer system with one or more associated computer for producing services liable to charges for the system users through these terminals.

10 This invention is generally connected to the use of a computer system for example via a telecommunication network and particularly to a method, by which the user can be charged for the services he uses.

15 A solution is already known, in which the users contact in advance to the computer operator in order to receive a particular user identification. When the users after this contact by their terminals to the desired computer, they enter their own personal identification by the terminal to this computer. The use of the computer is then charged on the grounds of the entered user  
20 identification, or for the utilized services an invoice is sent afterwards for instance by mail to the possessor of the used identification to the address he has announced beforehand.

25 A disadvantage in this known solution described above is that its adaptation implies, that the user must have his or her own personal user identification so that he can utilize services liable to charges in the computer concerned. Because user identifications are computer-  
30 related, this means that if the user wants to utilize services offered by more computers, he should have an own separate personal user identification for each computer. The user must therefore remember many individual user identifications, which may be troublesome. The operator  
35 must further maintain a special user register for the users, to which he has granted the user identification. The operator should also have readiness for charging or

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in practise resources for printing out invoices and mailing them, which may be rather laborious.

A computer system in connection with which charging  
5 has proved to be very troublesome is the INTERNET-network  
and among other things the World Wide Web (WWW)  
applications related to it. The data available in the Web  
is maintained as decentralized around the network. Each  
producer is responsible for his own information and  
10 distributes it in the network to the desired receivers.  
A separate user reads the multimedia-hypertext documents,  
follows the references given in these documents and gets  
information of the servers maintained by different  
parties. As a problem in connection with the Web has,  
15 however, turned out to be that the network cannot offer a  
system, by which the service providers could charge the  
service users of the services they have used.

The object of this invention is to solve the above-  
mentioned problem and to provide for use a method, by  
20 which the user can be charged for the services he has  
used without supposing the existence of the user  
identification. This object is attained by the method  
according to the invention, which is characterized in  
that an access is offered to the user to the services  
25 subject to charges of the computer system via his  
terminal for the time period, during which there is a  
connection from the user's telephone to a predetermined  
chargeable telephone number, when the user is charged for  
the use of chargeable services by adding the sum to be  
30 charged for the use of services to his telephone bill.

The invention is based on the idea that when an  
access to chargeable services is offered to the user only  
for the time period, during which a connection exists to  
a predetermined service number, the user can be invoiced  
35 via the telephone network, when the situation is avoided,  
in which own parallel charging system would be needed in  
the computer system. When adapting the method according  
to the invention no user identifications are needed in

the computer system, because it is not necessary for the provider of chargeable services to know the person, who uses his services, because he can add the expenses from the used services directly to the invoice of the telephone, from which there is a connection to the service number concerned subject to a charge. The Adaptation of the method according to the invention involves that the user has at his disposal a telecommunication link, by which he may via his terminal take connection to the desired computer system, and also a telephone link. In practice the method according to the invention can therefore be applied, if the user has at his disposal for instance two telephone extensions (e.g. stationary network extension and a cellular phone) or alternatively one ISDN-connection (Integrated Services Digital Network). The most significant advantages of the invention are, that services subject to charges can be invoiced utilizing already existing charging system (telephone bill), that the user does not need any user identification to use the chargeable services in the computer system, and that because the user has continuously open telephone connection, the offered computer adaptations can be added by voices to be transmitted by the telephone, whereat graphics and text can be transmitted to the user via the computer terminal and for instance music and audio messages through the telephone.

In a preferable embodiment according to this invention the computer system forms a connection to the telephone number, which the user via his terminal dials. This arrangement enables to make the user extension very user friendly. In this case it is anyway advantageous that no access is offered to the user to chargeable services before the user has via his terminal introduced to the computer system the identification code transmitted to him by an audio message through the telephone. In this way it is ensured that the user has really entered the telephone number, which he is entitled

to use, and not for instance the telephone number of his neighbour.

The invention relates also to a computer system, in which the method according to the invention can be applied. Characteristic to the computer system according to the invention is that this computer system includes a control unit adapted to transmit to the user's terminal a predetermined telephone number subject to charge both to wait, until the user forms a connection via the telephone network to said chargeable telephone number, after which the control unit offers an access to the user to the chargeable services of the computer system, until said telephone connection breaks off, and the charging unit adapted to add the expenses due to the use of chargeable services of the computer system to the telephone bill of the phone utilized by the user.

Characteristic to another embodiment according to the invention is that the computers system includes a control unit adapted to transmit to the user's terminal a request to feed the user's telephone number and to form a connection to the telephone number fed by the user via the telephone network, whereby the control unit is adapted to offer to the user an access to the chargeable services of the computer system, until said telephone connection breaks off, and the charging unit adapted to add the expenses due to the use of chargeable services of the computer system to the telephone bill of the phone utilized by the user.

The advantageous embodiments of the method according to the invention are shown in enclosed dependent claims 2 - 4. The invention will be described in the following by its advantageous embodiment with reference to accompanying figures, in which:

Figure 1 shows a flow diagram of the first preferable embodiment of the method according to the invention;

Figure 2 shows a flow diagram of the second preferable embodiment of the method according to the invention; and

Figure 3 shows a block diagram of the first embodiment of the computer system according to the invention.

Figure 1 shows a flow diagram of the first preferable embodiment of the method according to the invention. In the block A of Fig. 1 the user selects for instance in the INTERNET-network a Web-adaptation, which the service supplier has determined as chargeable.

In the block B the chargeable adaptation is activated, when a predetermined telephone number subject to charge is transmitted to the terminal and the user is also requested to call the number in question.

In the block C the adaptation stays and waits, until the user calls the chargeable number concerned. The user is not before said call allowed to use the selected chargeable adaptation.

In the block D an audio message is sent to the user including the code. The user is also requested to introduce the code concerned via his terminal to the computer system. This request can be transmitted to the user either as an audio message through the telephone or alternatively as a text via the terminal.

In the block E it is waited, until the mentioned code has been received. When the code is received, a transfer is made to the block F, in which an opportunity to use the selected chargeable adaptation is offered to the user. This adaptation can be such that in it text and graphics are transmitted to the user via the terminal and simultaneously through the telephone for instance music and audio messages. The user can use the adaptation, until he leaves it via his terminal or until the connection to his telephone breaks off.

In the block G the expenses due to the use of a service subjected to charge are added to the user's telephone bill. In practice this may take place either as

small instalments, which will be added during the use of the adaptation with certain intervals to the user's telephone bill or alternatively the whole accrued sum is added as one sum to the telephone bill upon the ending of the chargeable service.

The method stages D and E of the block diagram of Fig. 1 are not necessary but they can be omitted if desired, but their adaptation is advantageous in order to prevent misuse of the computer system.

Figure 2 shows a flow diagram of the second advantageous embodiment according to the invention. The adaptation of Fig. 2 corresponds otherwise entirely the flux diagram of Fig. 1, but in it connection is formed in a different way to the user's telephone, or the method stages B and C of Fig. 1 have been realized in a different way.

In the block B' the adaptation asks upon its activation the user's telephone number.

In the block C' it is waited, until the user has via his terminal fed his telephone number. After this the adaptation calls up the fed telephone number, when a connection is formed between the computer system and the user's telephone.

From the block C' transfer is made further on to the block D, which in the same way as blocks E - G correspond entirely the blocks D - G in Fig. 1.

In the case of Fig. 2 a more user friendly operational extension is achieved compared with the flow diagram of Fig. 1, because it is not necessary to call up with his telephone the service number, but the computer system calls the telephone number announced by the user.

Figure 3 shows a flow diagram of the first advantageous embodiment of the computer system according to the invention. In the case of Fig. 3 the system user has at his disposal two stationary network telephone extensions 1 and 2, of which to the first one has been connected a micro computer 3 by a modem 4 and to the other usual telephone 5.



User of Fig. 3 may form a connection through the public telephone network PSTN (Public Switched Telephone Network) to the INTERNET-network via the server 6 of the local teleoperator. The way, by which the user forms the connection from his computer to the INTERNET-network is, however, insignificant regarding the invention. The user can therefore alternatively form a connection through the local network directly to the INTERNET-network (not shown in the figure). To the INTERNET-network are on the other hand connected servers of several service providers, as e.g. the server 8 visible in Fig. 3, offering chargeable services. In order to use certain service the user first selects the desired WWW-service, which in this case is expected to activate the adaptation program in the server 8. When the adaptation is activated, the control unit 10 of the server 8 transmits to the user's terminal 3 a request to call up the predetermined service number. When the user after this calls by his telephone the number in question, his call is linked through the public switched telephone network PSTN and the local exchange 9 to the server 8 comprising a computer and one or more adaptation programs. Control unit 10 senses the formation of the telephone connection, after which it offers to the user a possibility to use freely the chargeable service of the server 8, until the telephone connection breaks off.

Upon the formation of the telephone link the charging unit 11 in the server is also activated. This charging unit gives the information needed for the user charging and associated with the chargeable services used by the user, when the accrued sum to be invoiced is added to the telephone bill of the telephone 5. The charging itself takes place for instance similarly as in connection with the chargeable services known as such.

Otherwise than described above the control unit 10' can be adapted to receive the telephone number fed by the user via his terminal, after which the control unit 10' forms a connection to the user's telephone 5. The

chargeable adaptation can in this way be made more user friendly.

5 It will be appreciated that the above description and the figures associated with it are only intended to illustrate the present invention. Those skilled in the art can make different variations and modifications to the invention without departing from the scope and spirit of the invention presented in the accompanying claims.

## Claims:

1. A method for charging a user of a computer system of the services liable to charges used by him, characterized in that an access to the services liable to charges is offered to the user via his data terminal for the time period during which a connection from the user's telephone to the predetermined telephone number liable to charges exists, when the user is charged for the use of the services liable to charges by adding the sum to be charged for the use to his telephone bill.

2. The method according to the claim 1, characterized in that in the method

the predetermined telephone number liable to charges is sent to the user's terminal (3),

it is waited until the user calls on his telephone (5) the mentioned telephone number, and

the access to the chargeable services of the computer system (8) is offered to the user for the time period during which a connection from the user's telephone to the mentioned chargeable telephone number exists.

3. The method according to the claim 1, characterized in that in the method

the request is sent to the user's terminal (3) for feeding the user's telephone number,

a connection is formed to the telephone number the user has fed through the telephone network (PSTN), and

the access to the chargeable services of the computer system (8) is offered to the user for the time

period during which the connection from the user's telephone to the mentioned chargeable telephone number exists.

4. The method according to the claim 2 or 3,  
5 characterized in that in the method the audio message is sent to the user by telephone, when the access to the chargeable services of the computer system (8) is offered to the user not until after that the user has fed via his terminal (3) the code included in the audio message to  
10 the computer system (8).

5. The computer system, to which has been linked one or more computer (8) for producing the chargeable services to the users of the system through these terminals (3), characterized in that the computer system  
15 comprises

the control unit (10), which has adapted to send to the user's terminal (3) the predetermined chargeable telephone number both to wait until the user forms a connection through the telephone network (PSTN) to the mentioned chargeable telephone number, after which the control unit (10) offers the access to the chargeable services of the computer system (8) to the user until the  
20 mentioned telephone connection breaks off, and

the charging unit (11), which has adapted to add  
25 the costs accrued from the use of the chargeable services to the telephone bill of the telephone the user has used.

6. The computer system, to which has been linked one or more computer (8) for producing the chargeable services to users of the system through these terminals  
30 (3), characterized in that the computer system comprises

the control unit (10'), adapted to send to the user's terminal (3) the request for feeding the user's telephone number both to form the connection to the telephone number the user has fed through the telephone network (PSTN), when the control unit (10') is adapted to offer the access to the user to the chargeable services of the computer system (8) until the mentioned telephone connection breaks off, and

the charging unit (10), adapted to add the costs accrued from the use of the chargeable services of the computer system (8) to the telephone bill of the telephone (5) the user has used.

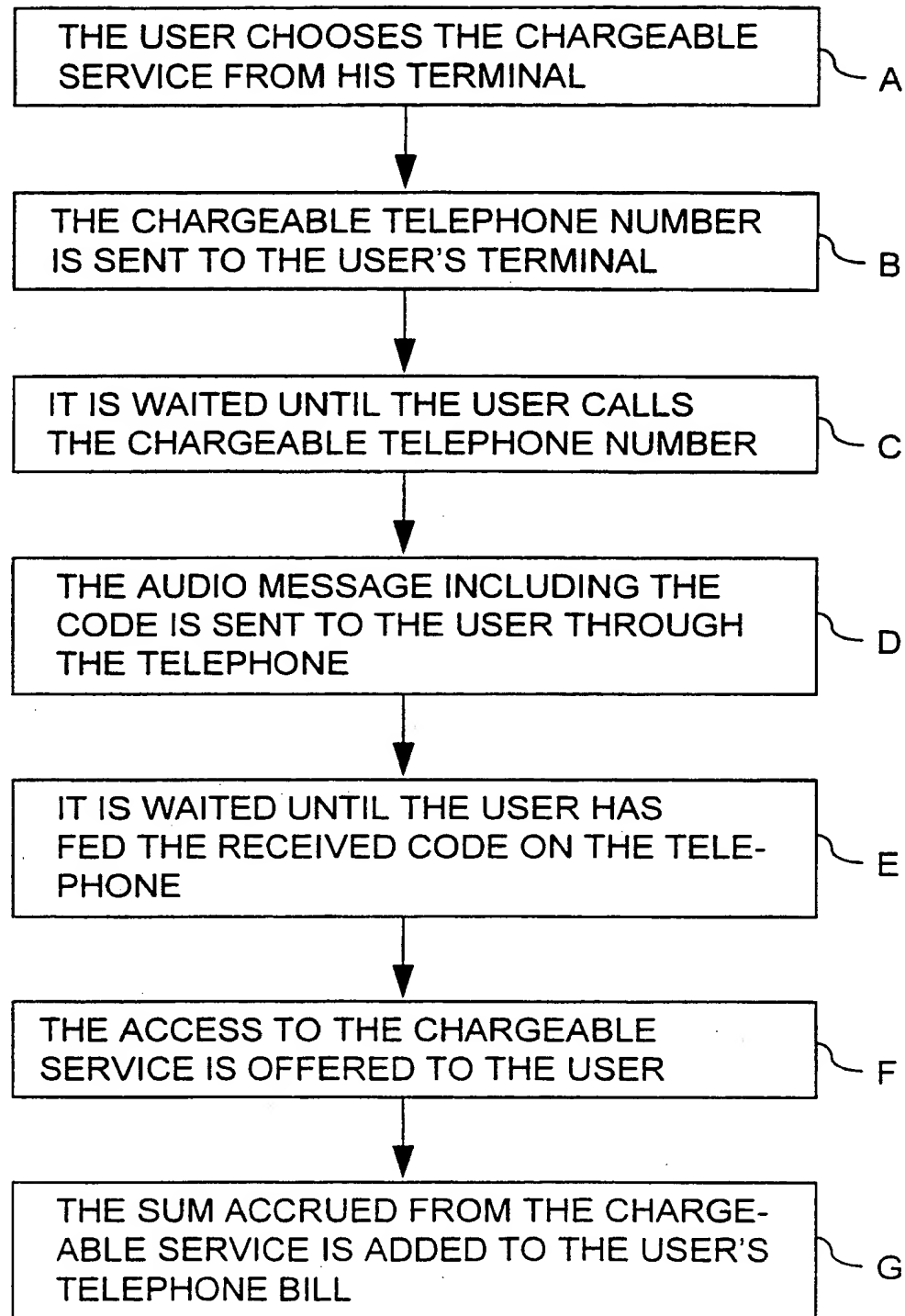


FIG. 1

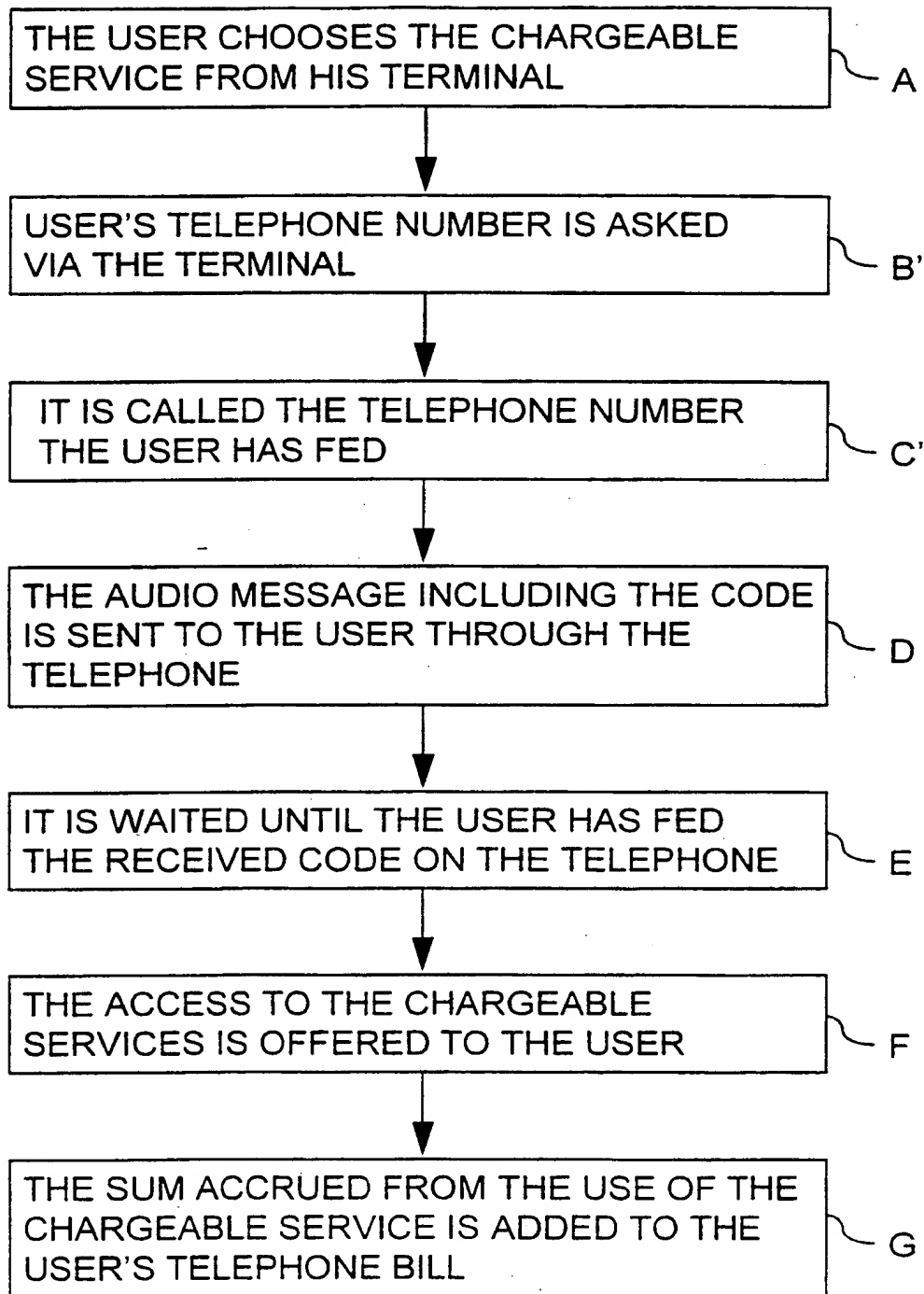


FIG. 2

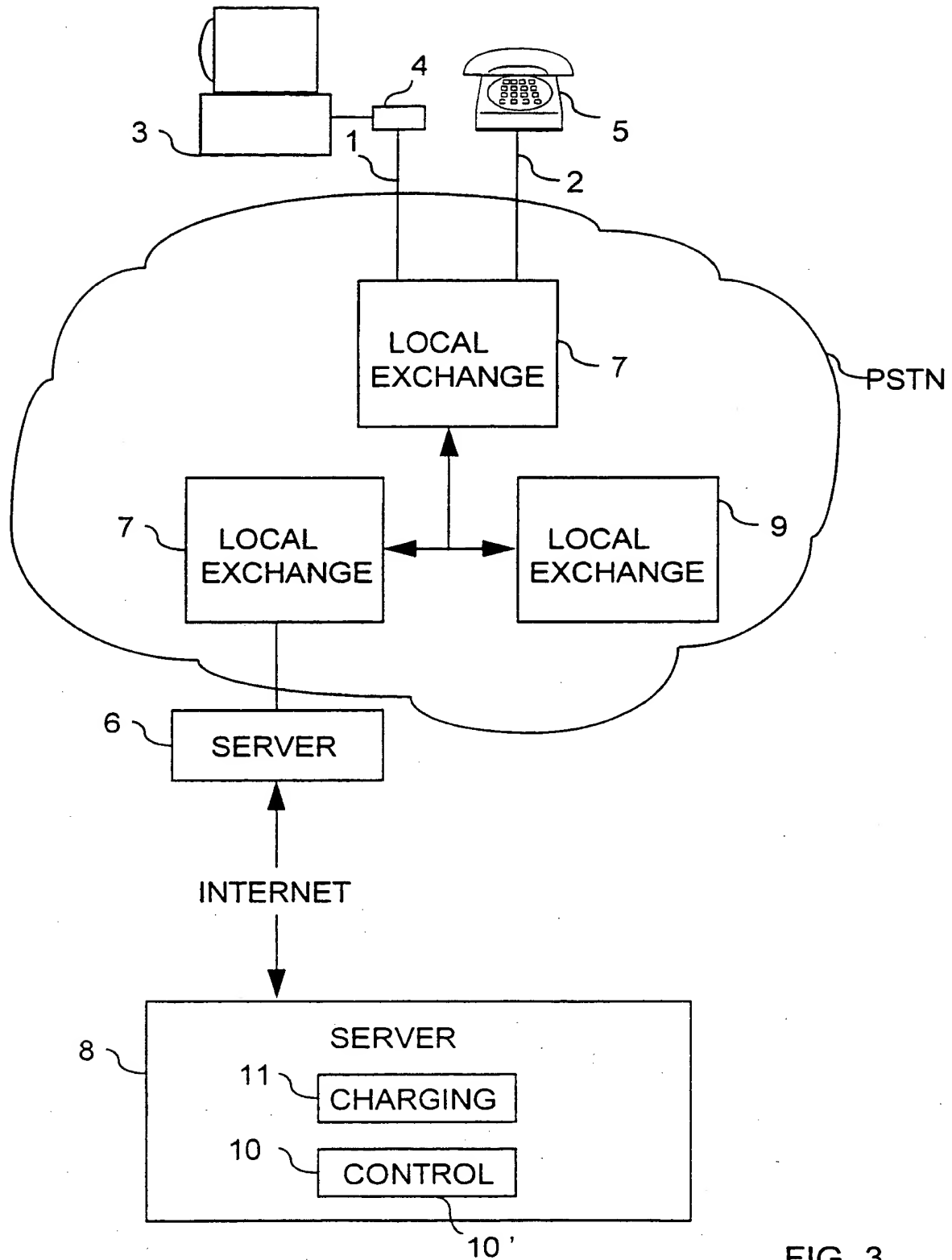


FIG. 3



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 96/00365

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
IPC6: H04M 15/00 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
IPC6: H04M		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5146491 A (D. SILVER ET AL), 8 Sept 1992 (08.09.92), column 2, line 18 - line 24, figures 1-4, abstract --	1-6
X	US 5148474 A (N. HARALAMBOPOULOS ET AL), 15 Sept 1992 (15.09.92), column 1, line 64 - column 2, line 11, figure 1, abstract --	1-6
X	US 5179584 A (M.TSUMURA), 12 January 1993 (12.01.93), column 1, line 14 - line 33, figures 1-2, abstract --	1-6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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Date of the actual completion of the international search		Date of mailing of the international search report
13 December 1996		17-12- 1996
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer  Roland Landström Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 96/00365

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SE 460511 B (JOHAN HENRIK BENDZ), 16 October 1989 (16.10.89), figures 1-3, claims 1-7, abstract  -----	1-6

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

28/10/96

International application No.

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US-A-	5146491	08/09/92	NONE		
US-A-	5148474	15/09/92	NONE		
US-A-	5179584	12/01/93	EP-A-	0483857	06/05/92
			JP-A-	5003519	08/01/93
SE-B-	460511	16/10/89	SE-A-	8803736	19/10/88

